Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-33. (Cancelled)

34. (Currently Amended)

A computer implemented method in which a computer performs the method comprising:

providing a plurality of buffers to store data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal;

calculating the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

selecting one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

incrementing the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

asserting the speed-up signal associated with the selected buffer if the speed-up counter associated with the buffer has reached a set threshold;

deasserting the speed-up signal associated with the selected buffer if the speed-up counter associated with the buffer has reached a reset threshold;

transmitting a data unit from the selected buffer; and

updating the TDT parameter associated with the selected buffer for each data unit transmitted from the selected buffer.

35. (Previously Presented)

The method according to claim 34, wherein the method is implemented in an Asynchronous Transfer Mode Network.

36. (Previously Presented)

The method according to claim 34, wherein each of the plurality of buffers further has an associated cell counter, the method further comprising:

incrementing the cell counter for each data unit stored in the buffer;

decrementing the cell counter for each data unit transmitted from the buffer; and

wherein selecting one of the plurality of buffers includes selecting one of the plurality of buffers with a cell counter having a non-zero count.

37. (Previously Presented)

The method according to claim 34, the method further comprising receiving the plurality of data units along a plurality of input virtual connections in a network.

38. (Previously Presented)

The method according to claim 34, the method further comprising deasserting the speed-up signal associated with the selected buffer and resetting the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.

39. (Currently Amended)

A system comprising:

a memory module ~~for storing~~ to store a plurality of buffers, each buffer containing a plurality of data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal; and

a scheduler module ~~for:~~ coupled to the memory module having a computer that:

~~calculating~~ calculates the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

~~selecting~~ selects one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

~~incrementing~~ increments the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

~~asserting~~ asserts the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a set threshold;

~~deasserting~~ deasserts the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a reset threshold;

~~transmitting~~ transmits a data unit from the selected buffer; and

~~updating~~ updates the TDT parameter associated with the selected buffer for each data unit transmitted from the buffer.

40. (Previously Presented)

The system according to claim 39, wherein the system is a line card used in an Asynchronous Transfer Mode Network.

41. (Currently Amended)

The system according to claim 39, wherein each of the plurality of buffers further has an associated cell counter and the computer further: ~~counter, the scheduler module further for:~~

~~incrementing~~ increments the cell counter for each data unit stored in the buffer;

~~decrementing~~ decrements the cell counter for each data unit transmitted from the buffer; and

~~wherein selecting one of the plurality of buffers includes selecting~~ selects from one of the plurality of buffers with a cell counter having a non-zero count.

42. (Previously Presented)

The system according to claim 39, the system receiving the plurality of data units along a plurality of input virtual connections in a network.

43. (Currently Amended)

The system according to claim 39, ~~the scheduler module further for deasserting~~ in which the computer further deasserts the speed-up signal associated with the selected buffer and ~~resetting~~ resets the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.

44. (Currently Amended)

A system comprising:

a plurality of buffers to store data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal;

means for calculating the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

means for selecting one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

means for incrementing the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

means for asserting the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a set threshold;

means for deasserting the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a reset threshold;

means for transmitting a data unit from the selected buffer; and

means for updating the TDT parameter associated with the selected buffer for each data unit transmitted from the buffer.

45. (Previously Presented)

The system according to claim 44, wherein the system is a line card used in an Asynchronous Transfer Mode Network.

46. (Previously Presented)

The system according to claim 44, wherein each of the plurality of buffers further has an associated cell counter, the system further comprising:

means for incrementing the cell counter for each data unit stored in the buffer;

means for decrementing the cell counter for each data unit transmitted from the buffer; and

wherein the means for selecting one of the plurality of buffers includes selecting one of the plurality of buffers with a cell counter having a non-zero count.

47. (Previously Presented)

The system according to claim 44, the system further comprising means for receiving the plurality of data units along a plurality of input virtual connections in a network.

48. (Previously Presented)

The system according to claim 44, the system further comprising means for deasserting the speed-up signal associated with the selected buffer and resetting the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.

49. (Currently Amended)

A computer readable medium storing executable instructions, which, when executed in a ~~processing system,~~ computer, cause the ~~processing system~~ computer to perform a method comprising:

providing a plurality of buffers to store data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal;

calculating the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

selecting one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

incrementing the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

asserting the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a set threshold;

deasserting the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a reset threshold;

transmitting a data unit from the selected buffer; and

updating the TDT parameter associated with the selected buffer for each data unit transmitted from the buffer.

50. (Currently Amended)

The computer readable medium according to claim 49, wherein the ~~processing system~~ computer is included in a line card used in an Asynchronous Transfer Mode Network.

51. (Previously Presented)

The computer readable medium according to claim 49, wherein each of the plurality of buffers further has an associated cell counter, the method further comprising:

incrementing the cell counter for each data unit stored in the buffer;

decrementing the cell counter for each data unit transmitted from the buffer; and

wherein selecting one of the plurality of buffers includes selecting one of the plurality of buffers with a cell counter having a non-zero count.

52. (Previously Presented)

The computer readable medium according to claim 49, the method further comprising receiving the plurality of data units along a plurality of input virtual connections in a network.

53. (Previously Presented)

The computer readable medium according to claim 49, the method further comprising deasserting the speed-up signal associated with the selected buffer and resetting the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.